Listing of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously Amended) An interposer for electrically coupling a semiconductive device to an electrical apparatus, the interposer comprising:

an electrically insulative substrate for removable coupling to an electrical apparatus, said substrate having a portion that has a uniform thickness, and said portion having a planar surface, said planar surface being part of a substrate outermost surface for receiving thereover a semiconductive device such that said semiconductive device lies at least in part over said outermost surface and is unimbedded into said substrate; and

an electrical conductor on the planar surface of the portion of the electrically insulative substrate, the electrical conductor having a receiving end on the planar surface of the portion of the electrically insulative substrate for contacting an electrically conductive terminal on connecting to said semiconductive device at electrically conductive terminals of said semiconductive device and such that at least some of said terminals are located in the region between said semiconductive device and said outermost surface of said substrate, and a terminal end on the planar surface of the portion of the electrically insulative substrate for connecting to said electrical apparatus, such that the coupling of said substrate to said electrical apparatus structurally supports said substrate with said terminal end in electric contact with said electric apparatus.

2. (Previously Amended) An interposer as recited in claim 1, wherein the substrate comprises crystalline glass.

3. Cancelled.

4. (Original) An interposer as recited in claim 1, wherein the receiving end protrudes upwardly with respect to the substrate.

5. (Withdrawn) An interposer as recited in claim 1, wherein the receiving end is disposed within a recess in the substrate.

6. (Previously Amended) An interposer as recited in claim 1, wherein the substrate comprises a material selected from the group consisting of glass, alumina, glass ceramic, nonmetallic nitride, aluminum nitride, nonmetallic carbide, and mixtures thereof.

7. (Previously Amended) An interposer as recited in claim 1, wherein the substrate comprises a nitride.

8. (Original) An interposer as recited in claim 1, wherein the interposer further comprises an electrically insulating layer on a portion of the conductor between the receiving end and the terminal end.

9. (Previously Amended) An interposer as recited in claim 7, wherein the nitride comprises boron nitride.

10. (Previously Amended) An interposer for electrically coupling a semiconductive device to an electrical apparatus, the interposer comprising:

a sheet for removable coupling to an electrical apparatus, said sheet having a portion that has a uniform thickness, and said sheet comprised of an electrically insulating material, said sheet having an outermost surface for receiving thereon a semiconductive device such that said semiconductive device lies at least in part on said outermost surface and is unimbedded into said sheet; and

an electrical conductor on the portion, the electrical conductor having a receiving end on said portion for connecting to said semiconductive device at electrically conductive terminals of said semiconductive device such that at least some of said terminals are located in the region between said semiconductive device and said outermost surface of said sheet, and a terminal end on said portion for connecting to said electrical apparatus, such that the semiconductive device is electrically coupled to the electrical apparatus when the semiconductive device is connected to the receiving end of the electrical conductor and the terminal end of the electrical conductor is connected to the electrical apparatus, such that the coupling of said sheet to said electrical apparatus structurally supports said sheet with said terminal end in electric contact with said electrical apparatus.

11. (Previously Amended) An interposer as recited in claim 10, wherein the material comprises alumina.

12. (Previously Amended) An interposer as recited in claim 10, wherein the material comprises crystallized glass.

13. (Previously Amended) An interposer for electrically coupling a semiconductive device to an electrical apparatus, the interposer comprising:

an electrically insulative sheet for removable coupling to an electrical apparatus, said sheet having a portion that has a uniform thickness, and said portion being composed of a material selected from the group consisting of devitrified ceramics, vitro ceramics, single oxide ceramics, and mixed oxide ceramics, and mixtures thereof, said sheet having an outermost surface for receiving thereon a semiconductive device such that said semiconductive device lies at least in part on said outermost surface and is unimbedded into said sheet; and

an electrical conductor on said portion, the electrical conductor having a receiving end on said portion for connecting to said semiconductive device at electrically conductive terminals of said semiconductive device such that at least some of said terminals are located in the region between said semiconductive device and said outermost surface of said sheet, and a terminal end on said portion for connecting to said electrical apparatus, such that the semiconductive device is electrically coupled to the electrical apparatus when the semiconductive device is connected to the receiving end of the electrical conductor and the terminal end of the electrical conductor is connected to the electrical apparatus, such that the coupling of said sheet to said electrical apparatus structurally supports said sheet with said terminal end in electric contact with said electrical apparatus.

14. (Previously Amended) An interposer for electrically coupling a semiconductive device to an electrical apparatus, the interposer comprising:

an electrically insulative sheet for removable coupling to an electrical apparatus, said sheet having a portion that has a uniform thickness, and said portion being composed of an electrically insulating material selected from the group consisting of alumina, alumina with silica, alumina with silicates, alumina with derivatives of silicates, and mixtures thereof, said sheet having an outermost surface for receiving thereon a semiconductive device such that said semiconductive device lies at least in part on said outermost surface and is unimbedded into said sheet; and

an electrical conductor on said portion, the electrical conductor having a receiving end on said portion for connecting to said semiconductive device at electrically conductive terminals of said semiconductive device such that at least some of said terminals are located in the region between said semiconductive device and said outermost surface of said sheet, and a terminal end on said portion for connecting to said electrical apparatus, such that the semiconductive device is electrically coupled to the electrical apparatus when the semiconductive device is connected to the receiving end of the electrical conductor and the terminal end of the electrical conductor is connected to the electrical apparatus, such that the coupling of said sheet to said electrical apparatus structurally supports said sheet with said terminal end in electric contact with said electrical apparatus.

15. (Previously Amended) An interposer for electrically coupling a semiconductive device to an electrical apparatus, the interposer comprising:

an electrically insulative sheet for removable coupling to an electrical apparatus, said sheet having a portion that has a uniform thickness, and said portion being composed of an electrically insulating material selected from the group consisting of boron nitrides, aluminum nitrides, and mixtures thereof, said sheet having an outermost surface for receiving thereon a semiconductive device such that said semiconductive device lies at least in part on said outermost surface and is unimbedded into said sheet; and

an electrical conductor on said portion, the electrical conductor having a receiving end on said portion for connecting to said semiconductive device at electrically conductive terminals of said semiconductive device such that at least some of said terminals are located in the region between said semiconductive device and said outermost surface of said sheet, and a terminal end on said portion for connecting to said electrical apparatus, such that the semiconductive device is electrically coupled to the electrical apparatus when the semiconductive device is connected to the receiving end of the electrical conductor and the terminal end of the electrical conductor is connected to the electrical apparatus, such that the coupling of said sheet to said electrical apparatus structurally supports said sheet with said terminal end in electric contact with said electrical apparatus.

16. Cancelled.

17. (Withdrawn) A system for electrically coupling a semiconductive device to an electrical apparatus, the system comprising:

an interposer, the interposer comprising:

a substrate comprised of an electrically insulating ceramic material; and

a plurality of electrical conductors on the substrate, each electrical conductor having a receiving end for connecting to a semiconductive device and a terminal end for connecting to an electrical apparatus, such that electrical circuitry within the semiconductive device is electrically coupled to the electrical apparatus when the semiconductive device is connected to said plurality of receiving ends of the electrical conductors and said plurality of terminal ends of the electrical conductors are connected to the electrical apparatus; and

a connector for holding the semiconductive device stationary relative to the interposer.

18. (Withdrawn) A system as recited in claim 17, wherein the connector connects the semiconductive device to the interposer such that a portion of the semiconductive device is exposed to the atmosphere to thereby dissipate heat to the atmosphere.

19. (Withdrawn) A system as recited in claim 17, wherein the connector removably connects the semiconductive device to the interposer.

20. (Withdrawn) A system as recited in claim 17, wherein the connector comprises a resilient biasing clip.

21. (Withdrawn) A system as recited in claim 17, wherein the connector is composed of a metal material.

22. (Withdrawn) A system as recited in claim 17, wherein the connector comprises an adhesive.

23. (Withdrawn) A system as recited in claim 17, wherein at least one of said receiving ends projects from the substrate.

24. (Withdrawn) A system as recited in claim 17, wherein at least one of said receiving ends is disposed within a recess in the substrate.

25. (Withdrawn) A system for testing a semiconductive device, the system comprising:

an electrical testing apparatus;

a semiconductive device having an electrical circuitry therein electrically connected to an electrical lead projecting therefrom;

an interposer, the interposer comprising:

a substrate comprised of an electrically insulating material selected from the group consisting of glass, alumina, glass ceramic, nonmetallic nitride, aluminum nitride, nonmetallic carbide, and mixtures and derivatives thereof; and

an electrical conductor on the substrate, the electrical conductor having a receiving end for connecting to the electrical lead of the semiconductive device and a terminal end for connecting to the electrical testing apparatus, whereby the semiconductive device is electrically coupled to the electrical testing apparatus when the electrical lead of the semiconductive device is in contact with the receiving end of the electrical conductor and the terminal end of the electrical conductor is in electrical communication with the electrical testing apparatus.

26. (Withdrawn) The system as defined in Claim 25, further comprising:

a connector for biasing the electrical lead of the semiconductive device towards and in contact with the receiving end of the electrical conductor, the connector being composed of copper and alloys thereof.

27. (Withdrawn) The system as defined in Claim 26, wherein the connector has a coating thereon composed of an electrically insulating material.

28. (Withdrawn) A method for manufacturing an interposer for electrically coupling a semiconductive device to an electrical apparatus, comprising:

providing a substrate composed of an electrically insulating material selected from the group consisting of glass, alumina, glass ceramic, nonmetallic nitride, aluminum nitride, nonmetallic carbide, and mixtures and derivatives thereof;

forming a plurality of recesses in the substrate; and

forming a plurality of electrical conductors on the substrate, each electrical conductor having a receiving end for connecting to a semiconductive device and a terminal end for connecting to an electrical apparatus, such that the semiconductive device is electrically coupled to the electrical apparatus when the semiconductive device is connected to the receiving ends and the terminal ends are connected to the electrical apparatus, each receiving end being within one recess of said plurality of recesses.

29. (Withdrawn) A method as recited in claim 28, further comprising forming an electrically insulating material on each said electrical conductor between the receiving end thereof and the terminal end thereof.

30. (Withdrawn) A method for testing a semiconductive device, comprising:

providing an electrical testing apparatus;

providing a container that contains a semiconductor device having electrical circuitry, the electrical circuitry being electrically connected to an electrical lead projecting out of the container;

providing an interposer comprising:

a substrate composed of an electrically insulating ceramic material, and

an electrical conductor on the substrate, the electrical conductor having a receiving end and a terminal end;

connecting the receiving end of the electrical conductor to the electrical lead of the semiconductive device;

connecting the terminal end of the electrical conductor to the electrical testing apparatus such that the electrical circuitry of the semiconductive device is in electrical communication with the electrical testing apparatus; and

performing an electrical test upon the electrical circuitry of the semiconductive device with the electrical testing apparatus.

31. (Withdrawn) A method for testing a semiconductive device, comprising:

providing an electrical testing apparatus;

providing a container that contains a semiconductor device having electrical circuitry, the electrical circuitry being electrically connected to a plurality of electrical leads projecting out of the container;

providing an interposer comprising:

a substrate composed of an electrically insulating ceramic material, and

a plurality of electrical conductors on the substrate, each electrical conductor having a receiving end and a terminal end;

connecting the receiving end of each electrical conductor to an electrical lead of said plurality of the electrical leads;

connecting each terminal end of the plurality of electrical conductors to the electrical testing apparatus such that the electrical circuitry of the semiconductive device is in electrical communication with the electrical testing apparatus; and

performing an electrical test upon the electrical circuitry of the semiconductive device with the electrical testing apparatus.

32. (Withdrawn) A method for testing a semiconductive device, comprising:

providing an electrical testing apparatus;

providing a semiconductive device having an electrical circuitry therein electrically connected to an electrical lead projecting therefrom;

providing an interposer comprising:

a substrate composed of an electrically insulating material selected from the group consisting of glass, alumina, glass ceramic, nonmetallic nitride, aluminum nitride, nonmetallic carbide, and mixtures and derivatives thereof; and

an electrical conductor on the substrate, the electrical conductor having a receiving end and a terminal end;

connecting the receiving end of the electrical conductor to the electrical lead of the semiconductive device;

connecting the terminal end of the electrical conductor to the electrical testing apparatus such that the electrical circuitry of the semiconductive device is in electrical communication with the electrical testing apparatus; and

performing an electrical test upon the electrical circuitry of the semiconductive device with the electrical testing apparatus.

33. (Withdrawn) A method as defined in Claims 32, wherein connecting the receiving end of the electrical conductor to the electrical lead of the semiconductive device comprises:

providing a connector for holding the interposer stationary relative to the semiconductive device, the connector covering a portion of the semiconductive device and another portion of the semiconductive device being exposed to the ambient so as to dissipate heat thereto.

34. (Withdrawn) A method as defined in Claim 33, wherein the connector for biases the receiving end of the electrical conductor to the electrical lead of the semiconductive device.

35. (Withdrawn) A method as defined in Claim 33, wherein the connector is composed of a ceramic material.

36. (Withdrawn) A method as defined in Claim 33, wherein the connector comprises a resilient biasing clip.

37. (Withdrawn) A method as defined in Claim 33, wherein the connector is composed of metal material.

38. (Withdrawn) A method as defined in Claim 32, wherein performing an electrical test upon the electrical circuitry of the semiconductive device with the electrical testing apparatus comprises:

the electrical testing apparatus storing information on the electrical circuitry of the semiconductive device; and

the electrical testing apparatus retrieving the information from the electrical circuitry of the semiconductive device.

39. (Previously Added) An interposer as recited in claim 7, wherein the nitride comprises nonmetallic nitride.

40. (Previously Added) An interposer as recited in claim 1, wherein the substrate comprises a carbide.

41. (Previously Amended) An interposer as recited in claim 40, wherein the carbide comprises nonmetallic carbide.

42. (Previously Added) The interposer as defined in Claim 13, wherein:

the portion of the sheet has a planar surface;

the electrical conductor is on the planar surface of the portion of the sheet;

the receiving end is on the planar surface of the portion of the sheet; and

the terminal end is on the planar surface of the portion of the sheet.

43. (Previously Added) The interposer as defined in Claim 14, wherein:

the portion of the sheet has a planar surface;

the electrical conductor is on the planar surface of the portion of the sheet;

the receiving end is on the planar surface of the portion of the sheet; and

the terminal end is on the planar surface of the portion of the sheet.

44. (Previously Added) The interposer as defined in Claim 15, wherein:

the portion of the sheet has a planar surface;

the electrical conductor is on the planar surface of the portion of the sheet;

the receiving end is on the planar surface of the portion of the sheet; and

the terminal end is on the planar surface of the portion of the sheet.

45. (Previously Amended) An interposer for electrically coupling a semiconductive device to an electrical apparatus, the interposer comprising:

an electrically insulative substrate for removable coupling to an electrical apparatus, said substrate being comprised of a material selected from the group consisting of crystalline glass, nitride, and carbide, and mixtures thereof, said substrate having an outermost surface for receiving thereon a semiconductive device such that said semiconductive device lies at least in part on said outermost surface and is unimbedded into said substrate; and

an electrical conductor on the substrate, the electrical conductor having a receiving end for connecting to said semiconductive device at electrically conductive terminals of said semiconductive device such that at least some of said terminals are located in the region between said semiconductive device and said outermost surface of said substrate, and a terminal end for connecting to said electrical apparatus, such that the coupling of said substrate to said electrical apparatus structurally supports said substrate with said terminal and in electrical contact with said electrical apparatus.

46. (Previously Amended) The interposer as defined in Claim 45, wherein the nitride is a nonmetallic nitride.

47. (Previously Amended) The interposer as defined in Claim 45, wherein the nonmetallic nitride is boron nitride.

48. (Previously Amended) The interposer as defined in Claim 45, wherein the carbide is a nonmetallic carbide.

49. (Previously Amended) An interposer as recited in claim 1, wherein the electric apparatus is selected from the group consisting of a computer, a program logic controller, an electronic game assembly, and a controlling module.

50. (Previously Amended) An interposer as recited in claim 1, wherein the electric apparatus comprises a testing apparatus that monitors, tests, or evaluates the semiconductive device.

51. (Cancelled).

52. (Currently Amended) An interposer for electrically coupling a semiconductive device to an electrical apparatus, the interposer comprising:

a substrate for coupling to an electric apparatus, the electrical apparatus selected from the group consisting of a computer, a program logic controller, an electronic game assembly, a controlling module, and a testing apparatus which monitors, tests, or evaluates the semiconductive device, the substrate having a planar surface, said planar surface being part of a substrate outermost surface for receiving thereover a semiconductive device such that said semiconductive device lies at least in part over said outermost surface and is unimbedded into said substrate; and

an electrical conductor on the planar surface of the portion of the electrically insulative substrate, the electrical conductor having:

a receiving end on the planar surface of the portion of the electrically insulative substrate for connecting to said semiconductive device at electrically conductive terminals of said semiconductive device and such that at least some of said terminals are located in the region between said semiconductive device and said outermost surface of said substrate, and

a terminal end on the planar surface of the portion of the electrically insulative substrate for coupling to the electrical apparatus, such that the coupling of said substrate to said electrical apparatus puts said terminal end in electric contact with said electrical apparatus and structurally supports said substrate.